NASA DEVELOP – 2022 Summer Potential Project List

updated 1/21/2022

*NOTE: These project ideas are **tentative** and **subject to change**. Projects will be conducted either virtually or in-person* at a DEVELOP location and each node will conduct 1-3 projects for the 2022 summer term. This list may be updated throughout the application period.*

The DEVELOP summer 2022 term will offer opportunities for in-person or virtual participation, by project. The work environment of the opportunity will be dependent on the project and DEVELOP location. When selecting your preferred location(s), please pay attention to the type of opportunity selected based on the location and project offers on this document.

**If prior to the start of the summer term it is determined that onsite participation is no longer feasible due to evolving pandemic issues, we will revert locations back to virtual participation as needed. This is a fluid situation, and we are using current information to make decisions. We appreciate your flexibility and understanding if changes are required.*

In-person/virtual project opportunities –

Location	Virtual Project(s)	In-person Project(s)
AL – Marshall		X
AZ – Tempe	X	X
CA – Ames	X	X
CA – JPL	X	X
CO – Fort Collins	X	X
GA – Athens		X
ID – Pocatello	X	X
MA – Boston	X	X
MD – Goddard	X	X
NC – NCEI	X	
VA – Langley	X	X
EJ – Environmental Justice Projects	X	
PL – Pop-up Location at University of Virginia		X
BT – Bhutan Special Project	X	X

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Proposed project list by DEVELOP Location –

AL – Marshall

- Coastal Alabama Water Resources: *Implementing ECOSTRESS and DESIS for Enhanced Evaluation of Water Quality Parameters for Manatee Habitat in Mobile Bay (In-person project)*

AZ – Tempe

- Albuquerque Urban Development: Enhancing Urban Cooling Interventions by Modeling Urban Forestry Through NASA Earth Observations in Albuquerque, New Mexico *(In-person project)*
- Hawai'i Island Climate: Using NASA Earth Observations to Delineate New Wetlands from Sea Level Rise and Impacts on Historic Hawaiian Lands *(Virtual project)*

CA – Ames

- Florida Water Resources: Assessing Coastal Resiliency Across Florida's Aquatic Preserves in Response to Hurricane Forces *(In-person project)*
- New York Ecological Forecasting: Monitoring Changes in Seasonal Tree Phenology to Understand Ecosystem Response from Emerald Ash Borer Outbreaks *(Virtual project)*

CA – JPL

- Lower Illinois River Valley Ecological Forecasting: Wetland Mapping of the Lower Illinois River using Synthetic Aperture Radar and Optical Satellite Imagery for Conservation and Restoration Prioritization Efforts *(In-person project)*
- Gulf of Mexico Health & Air Quality II: Mapping Methane Emissions Plumes Using Sunglint-Configured Imagery for Monitoring Offshore Oil & Gas Activity *(Virtual project)*

CO – Fort Collins

- Black Hills Wildfires: Mapping Post-fire Tree Regeneration using Landsat Imagery *(In-person project)*
- Yampa Water Resources: Monitoring Water Quality and Evaluating Potential Drivers of Algae Blooms in the Upper Yampa River Watershed *(In-person project)*
- Puget Sound Water Resources: Using NASA Earth Observations to Map Bull Kelp in the Puget Sound Washington to Support Conservation and Restoration *(Virtual project)*

GA – Athens

- Haiti Agriculture II: Utilizing NASA Earth Observations to Evaluate the Success of Reforestation Projects in Haiti *(In-person project)*
- Yellowstone Ecological Forecasting: Utilizing Earth Observations to Assess Change in Aspen Extent and Health in Northern Yellowstone National Park *(In-person project)*

ID – Pocatello

- Idaho Wildfires: Assessing Drought and Fire Conditions, Trends, and Risk to Inform State Mitigation Efforts and Bolster Monitoring Protocol in Idaho's Palouse Area *(In-person project)*
- Grand Valley Ecological Forecasting II: Forecasting Trends in Pinyon-Juniper Habitat Relative to Drought, Beetle Infestation, Wildland Fires, and Treatment to Plan Future Management Strategies *(Virtual project)*

MA – Boston

- Great Slave Lake Water Resources: Mapping Changes in Delta Dynamics Within Great Slave Lake Using Earth Observation *(In-person project)*
- Kansas City Urban Development: Applying NASA Earth Observations to Assess Environmental and Socioeconomic Factors of Urban Flood Vulnerability in Kansas City, Kansas *(Virtual project)*

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MD – Goddard

- Chesapeake Bay Agriculture: Monitoring Marsh Migration in Maryland's Coastal Croplands *(In-person project)*
- Maine Ecological Forecasting III: Utilizing Earth Observations to Monitor Federally Endangered Atlantic Salmon *(Salmo salar)* Habitat in Maine: An Interactive Workshop *(Virtual project)*

NC – NCEI

- Western Sonoran Desert Water Resources: Evaluating Rock Pool Hydroperiod Fluctuation Vulnerability to Inform Habitat Monitoring and Protection in the Western Sonoran Desert *(Virtual project)*
- Mato Grosso Agriculture: Improving Crop Classification Mapping Using Optical and Radar Satellite Sensors to Enhance Agricultural Management and Policy Making in Mato Grosso, Brazil *(Virtual project)*

VA – Langley

- Delaware Basin Ecological Forecasting: Identifying Vegetation Trends and Atmospheric Stressors in the Guadalupe Mountains and Carlsbad Caverns National Parks *(In-person project)*
- Chile Wildfires: Detecting Areas of Lightning Occurrence and Evaluating Vegetation Composition for Preventative Wildfire Management *(Virtual project)*

EJ – Environmental Justice Projects

- Wichita Climate: Mapping and Modeling Land Cover, Heat Vulnerability, and Intervention Scenarios to Inform the City of Wichita's Climate Adaptation and Mitigation Plans *(Virtual project)*
- Milwaukee Urban Development: Assessing the Drivers of Urban Flooding Vulnerability in Milwaukee using NASA Earth Observations *(Virtual project)*

PL – Pop-up Location at University of Virginia

- Maipo River Valley Agriculture: Determining Crop Coefficients Using Remote Sensing and Meteorology for the Maipo River Basin in Chile *(In-person project)*
- Chesapeake Bay Water Resources: Characterization of Sediment Dynamics for Enhanced Monitoring in the Chesapeake Bay *(In-person project)*

BT – Bhutan Special Project

- Bhutan Agriculture II: Assessing and Developing Focal Crop Masks and Creating Data Collection Protocols using Remotely Sensed Data in Bhutan
    - **Note**: This special project is for Bhutanese scholars studying in the United States *only*. The status of this project (i.e. in-person at AL - Marshall or virtual) will be determined at a later date due to applicant interest and availability.